Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. Pharm. – SEMESTER – III • EXAMINATION – WINTER 2013

Subject Code: 930001 **Date: 09-12-2013**

Subject Name: Experimental Design and Patents

Time: 10.30 am - 01.30 pm **Total Marks: 80**

Instructions:

1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 (a) What is DOE? Discuss factorial designs with its advantages & limitations. **8**

(b) What is interaction? Describe Placket-Burman design with its applications. **8**

Q.2 (a) What is CCD? Classify CCDs. Discuss Box-Bahenken design. **8**

(b) Following table represents the results of 2^3 full factorial study performed to improve the yield of a chemical process. Construct the polynomial equation using Yate's method and comment on the same. **8**

Treatment combination	(1)	a	b	ab	c	ac	bc	abc
% Yield	92	77	83	81	79	83	90	76

Q.3 (a) What are contour plots? Describe its significance with examples. **8**

(b) What is model? Describe full and reduced model as per experimental design. **8**

Q.4 (a) Explain following terminologies with reference to experimental design: **8**
i) Random error ii) Factors iii) Levels iv) Confounding

(b) Write a note on copy write and trademark protection. **8**

Q.5 (a) What are IPRs? What are the advantages of taking patents? **8**

(b) Differentiate between product patent and process patent giving examples. **8**

Q. 6 (a) What is an invention? Describe the characteristics of patentable inventions. **8**

(b) What is patent act? Discuss evolution of Patent Act in India. **8**

Q.7 (a) What is laboratory notebook? How is it maintained? **8**

(b) What is patent infringement? Discuss the different types of patent infringement. **8**

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